

## CLAIMS

What is claimed is:

1. A mismatch detector comprising:  
  
a directional device adapted to couple signals across the device;  
  
a detector coupled to a port on the directional device and configured to measure a reflected power;  
  
a second detector coupled to a port on the directional device and configured to measure a transmit power;
2. The mismatch detector of claim 1 wherein the directional device is a directional coupler.
3. The mismatch detector of claim 1 wherein the directional device is a circulator.
4. The mismatch detector of claim 1 wherein the directional device is an isolator.
5. The mismatch detector of claim 1 wherein the directional device is a circulator and the output of the circulator is coupled to a slow wave structure.
6. The mismatch detector of claim 5 wherein the slow wave structure is coupled to multiple power detectors.

7. The mismatch detector of claim 6 wherein the multiple power detectors are configured to measure magnitude and phase of a reflected signal.

8. A wireless electronic device comprising:

a mismatch detector comprising:

a directional device adapted to couple signals across the device;

a detector coupled to a port on the directional device and configured to measure a reflected power;

a second detector coupled to a port on the directional device and configured to measure a transmit power;

wherein the mismatch detector is coupled to a matching circuit and adapted to modify the impedance of the matching circuit;

an antenna, coupled to the matching circuit;

a transceiver coupled to the antenna through the matching circuit;

a control block coupled to the transceiver and adapted to control the transceiver;

a memory coupled to the control block and configured to store data for the control block;

an input device coupled to the control block and configured to receive input from a user;

a power source coupled to the control block and configured to supply power to the control block.

9. The wireless device of claim 8 wherein the wireless device is a mobile wireless device.

10. The wireless device of claim 8 wherein the wireless device is a base station.

11. The wireless device of claim 8 wherein the wireless device is multiple wireless devices forming a wireless communication system.

12. The wireless system of claim 11 wherein the multiple wireless devices include at least one base station.

13. The wireless system of claim 11 wherein the multiple wireless devices include at least one mobile wireless device.

14. A communication device comprising:

a mismatch detector comprising:

a directional device adapted to couple signals across the device;

a detector coupled to a port on the directional device and configured to measure a reflected power;

a second detector coupled to a port on the directional device and configured to measure a transmit power;

a power amplifier coupled to the directional device and configured to amplify communication signals;

15. The communication device of claim 14 wherein the amplifier is configured to amplify transmit signals.

16. The communication device of claim 14 wherein the amplifier is configured to amplify receive signals.